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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,253	02/08/2002	Peter McDuffie White	TEL-001	8407

25962 7590 12/14/2004

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EXAMINER

ENG, GEORGE

ART UNIT PAPER NUMBER

2643

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/049,253

Applicant(s)

WHITE, PETER MCDUFFIE

Examiner

George Eng

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This Office action is in response to the amendment filed 8/27/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-24, 28-37, 40-41 and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machtig et al. (US PAT. 6,042,235 hereinafter Machtig) in view of Komatsu et al. ("41.2:Multiscreen Display Method for Expanding Stereoscopic Viewing Space", hereinafter Komatsu).

Regarding claim 1, Machtig discloses a communication system comprising first and second locations, wherein the second location is remote and separate from the first location, each of location comprising a real time image capturing device (250, figure 30), an image projecting device (246, figure 30), an observation zone for occupation by a participant (242, figure 30), and a two way mirror (106, figure 30) through which images are viewed, the image capturing device at the first location being arranged to view a participant occupying the observation zone at the first location directly or indirectly along a line of sight which pass through the two way mirror at

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the first location, and linked to the image projecting device at the second location whereby a captured image is transmitted from the first location to the second location and projected at the second location for viewing through the two way mirror at the second location (col. 17 line 19 through col. 18 line 55). Although Machtig teaches the first location comprises an image generated at the second location of a participant at the second location is seen through the two way mirror at the first location in superimposed relation within a three dimensional setting afforded (col. 13 line 44 through col. 15 line 30), Machtig does not specifically teach a visual depth cue physically located on an opposite side relative to the observation zone, the visual depth cue being in the form of one or more physical objects visible from the observation zone. However, Komatsu teaches a multiscreen display method for expanding stereoscopic viewing by utilizing depth of focus of an observer to estimate the allowance limit of the parallax so that one ordinary skill in the art would recognize Komatsu teaches a visual depth cue physically located on an opposite side relative to the observation zone and the visual depth cue being in the form of one or more physical objects visible from the observation zone (figure 2 and page 905-908), in order to enhance reality of the displayed image. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Machtig in having the visual depth cue physically located on an opposite side relative to the observation zone, the visual depth cue being in the form of one or more physical objects visible from the observation zone, as per teaching of Komatsu, because it enhances reality of the displayed image.

Regarding claim 2, Machtig teaches one or more physical objects are visually located at position forwardly and rearwardly of a visual position of the image generated at the second

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location when the image is being projected at the first location as view from the observation zone at the first location (figure 30, col. 14 lines 25-50 and col. 17 lines 55-65).

Regarding claims 3-9, Komatsu teaches the setting comprising a chair, the back of the chair being visually located forwardly or rearwardly of a visual position of the image generated at the second location when the image is being projected at the first location as view from the observation zone at the first location, wherein a substantially full height image of a participant at the second location is projected for viewing against the stage setting at the first location (pages 905-908).

Regarding claim 10, Machtig discloses a background located rearwardly of a visual position of the image generated at the second location when the image is being projected at the first location as view from the observation zone at the first location, and means being provided for producing an image on the background for viewing through the two-way mirror (col. 18 lines 29-55).

Regarding claim 11, Komatsu discloses the image generated at a remote location is projected so that it represents a remote participant at the second location as a substantially life-size image in relation to the setting from the observation zone at the first location (figure 2).

Regarding claim 12, Machtig teaches to include means for illuminating the one or more physical objects (figure 2 and col. 1 lines 62-67).

Regarding claim 13, Machtig discloses the image generated at the second location of a participant at the second location comprising a background, which is substantially non-visible when viewed through the two-way mirror at the first location by a participant at the first location (col. 18 lines 11-20).

Regarding claims 14-15, Machtig discloses the two-way mirror being inclined relative to the line of signal of a participant stationed in the observation zone, which the two-way mirror is inclined about a horizontal axis (figures 29-31).

Regarding claims 16-17, Macchtig discloses a remotely captured image being incident on the two-way mirror from a location below or above the two-way mirror (figure 63).

Regarding claim 18, Machtig discloses to include means for adjusting at least one of the image capturing device and a participant in the observation zone so that the eye level of the participant is substantially aligned with the line of sight of the image capturing device viewing the participant (col. 17 lines 19-41).

Regarding claims 19-21, Machtig discloses to display remotely capture images as to create a stereoscopic visual effect when viewed from the observation zone, which the remotely-captured images are processed using light polarizing element to form pairs of image having different polarization so that a stereoscopic image of a participant is seen when view form the observation zone using polarized glasses, whereby the images are viewed at the observation zone using a viewer synchronized with the display of the alternating images and the stereoscopic visual effect is produced by alternating between images of a participant capture from different view point (figures 60-65 and col. 23 line 14 through col. 24 line 19), as well as Komatsu (figure 2 and page 906-907).

Regarding claims 22-24, Machtig discloses at least one of the location being provided with at least two image capturing devices for viewing the participants from different angles and in which at least one of the locations is provided with at least two image projecting devices linked to the image capturing device, in which remotely captured images from the second

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location are displayed so as to create a stereoscopic effect when viewed from the observation zone at the first location so that the remotely captured images are projected onto a retro-reflective screen located at the opposition side of the two-way mirror relative to the observation zone whereby the remotely capture images from the second location are viewed in retro-reflection at the observation zone of the first location (figure 16 and col. 23 line 49 through col. 24 line 19).

Regarding claim 28, Machtig discloses to include means for correlating actions of a participant at the second location with the one or more physical objects in the first location three-dimensional setting so as to produce the impression of interaction of the image observed at the first location with one or more physical object (figure 65).

Regarding claim 29, the limitations of the claim are rejected as the same reasons set forth in claim 1.

Regarding claim 30, Komatsu discloses a substantially full height image of the participant(s) at the first location being projected for viewing within the three-dimensional setting of the second location (figure 2).

Regarding claim 31, Machtig discloses the setting comprising a stage and means for displaying further image (figures 28-31).

Regarding claims 32-33, Machtig teaches to implement the system in the field of teleconferencing so that the system inherently includes a voice communication link between the first and second location, in which a visual person-to-person link between the location is supplemented by a computer link between the locations (col. 17 lines 19-25).

Regarding claims 34-35, Machtig discloses a person at each of the locations is able to communicate at least visually with a person at one or more of the other location such that a captured image of the one or more participant at the first location is transmitted from the first location to the image projecting device of the second location and is projected for viewing at the second location through the two-way mirror in superimposed relation with the three dimensional setting at the second location (figure 65 and col. 13 line 44 through col. 15 line 30).

Regarding claims 36-37, the limitations of the claims are rejected as the same reasons set forth in claim 1.

Regarding claims 40-41, the limitations of the claims are rejected as the same reasons set forth in claim 1.

Regarding claims 44-45, the limitations of the claims are rejected as the same reasons set forth in claims 32-33.

Regarding claim 46, the limitations of the claim are rejected as the same reasons set forth in claims 34-35.

4. Claims 25-27, 38-39 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Machtig et al. (US PAT. 6,042,235 hereinafter Machtig) in view of Komatsu et al. ("41.2: Multiscreen Display Method for Expanding Stereoscopic Viewing Space", hereinafter Komatsu) as applied in claims above, and further in view of Velez et al. (US PAT. 4,852,988 hereinafter Velez).

Regarding claims 25-26, the combination of Machtig and Komatsu differs from the claimed invention in not specifically teaching to include means for tracking the eye position of a

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participant in the observation zone and the tracking means including an item of headwear to be worn by the participant in use of the system. However, Velez teaches a head mounted eye movement measurement system which utilizing an eye tracker in combination with a point of view camera to maintain proper eye alignment irrespective of eye movement (col. 4 line 47 through col. 7 line 46). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the combination of Machtig and Komatsu in having means for tracking the eye position of a participant in the observation zone and the tracking means including an item of headwear to be worn by the participant in use of the system, as per teaching of Velez, in order to maintain proper eye alignment irrespective of eye movement.

Regarding claim 27, Velez discloses the tracking means including camera means for observing the participant and means for analyzing the images captured thereby determine eye position (figure 1 and col. 9 line 15 through col. 10 line 20).

Regarding claims 38-39 and 42-43, the limitations of the claims are rejected as the same reasons set forth in claims 25-26.

Response to Arguments

5. Applicant's arguments with respect to claims 1-46 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

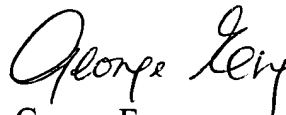
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Heirich (US PAT. 5,801,758) discloses a system for image capture and display utilizing time sharing across a single two-way optical path (abstract). Allen et al. (US PAT. 5,572,248) discloses a system providing a face-to-face video conferencing utilizing a video mirror (col. 2 line 6 through col. 4 line 19). Swain (US PAT. 6,157,733) discloses an image processing techniques for extracting one or more depth cues from a single two-dimensional image and then combining the depth cues to create an image with enhance depth effect, wherein the depth cues in the form of one or more intermediate images having an improve depth effect (abstract).

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to George Eng whose telephone number is 703-308-9555. The examiner can normally be reached on Tue-Fri 7:30 AM-6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A. Kuntz can be reached on 703-305-4708. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in cursive script, appearing to read "George Eng".

George Eng
Primary Examiner
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